CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: September 18, 2007

TO: Mayor and Councilmembers

FROM: Public Works Administration, Public Works Department

SUBJECT: Corporation Yard Solar Electric Project

RECOMMENDATION: That Council:

A. Receive an update on the proposed Corporation Yard Solar Electric Project and provide direction regarding Council preferences for retaining or assigning Renewable Energy Certificates associated with the project;

B. Authorize the Public Works Director, in consultation with the City Administrator and Finance Director, to negotiate and execute a power purchase agreement and ancillary agreements, as necessary. The agreement should be in a form approved by the City Attorney, and provide for design, construction, ownership, maintenance, and operation of a third-party owned solar electric system of up to approximately 400 kilowatts. The system will serve the City's Corporation Yard Facility, targeting a solar cost increment estimated to be no greater than 25%, compared to billing under Southern California Edison's (SCE) current GS-2 rate schedule;

C. Authorize the Public Works Director to approve amendments to such agreements, in a form approved by the City Attorney, in order to facilitate the installation and operation of the project, provided that such amendments do not result in a City cost that exceeds the above limit;

D. Authorize the Public Works Director to execute agreements and other documents, as necessary, to participate in SCE's Self Generation Incentive Program in order to qualify for incentive payments currently reserved for the project under said program; and

REVIEWED BY: _____Finance _____Attorney

Agenda Item No._____

E. Introduce, and subsequently adopt, by reading of title only, An Ordinance of the Council of the City of Santa Barbara Approving a Power Purchase Agreement Between the City of Santa Barbara and Tioga Energy, Inc., or Solar Power Partners Fund I, LLC, for the Design, Construction, Ownership, Maintenance, and Operation of a Solar Electrical System at 630 Garden Street and 635 Laguna Street, Santa Barbara, California, and Related Incentive Program Agreements with Southern California Edison Company.

EXECUTIVE SUMMARY:

This report provides a status update on the proposed construction of a solar electric system to serve the City's Corporation Yard under a power purchase agreement. The project has been planned to take advantage of Federal tax credits (through third party ownership of the system) and a substantial utility rebate in order to minimize the cost of solar electricity. The utility rebate, administered by Southern California Edison (SCE), has a deadline of September 30, 2007 for contract execution and submittal, which makes for a very tight timeline. While negotiations with the top two proposers are still underway, our intent at this meeting is to provide the Council with an estimate of the expected project cost relative to a "no solar" alternative, get direction regarding whether the Council wishes to retain or assign Renewable Energy Certificates associated with the project, and provide staff with authority to move forward with the necessary ordinance and agreements in the event negotiations produce a project that meets the recommended cost criterion.

DISCUSSION:

Background

In adopting the Sustainable City Program, Council directed staff to look for renewable energy opportunities in City facilities. Electricity is the City's major energy expense, and solar photovoltaic systems are technically feasible for producing electrical power to offset grid power. The key issues have been the cost of such power relative to use of grid power, the effect of potential future price escalations on the cost of grid power, and the policy considerations associated with the indirect benefits related to the use of renewable energy.

With the completion of the solar electric installation at Fire Station No. 2, staff investigated opportunities where economy of scale and third-party ownership could provide the most cost effective use of solar electricity in a City facility. The Corporation Yard (the one-and-a-half block area located at the 600 block of Garden and Laguna Streets) was considered suitable since it provides a substantial un-shaded roof area in proximity to a large electrical load, and is a facility expected to be in its current configuration for the indefinite future.

Electrical usage at the site is approximately 800,000 kilowatt-hours (kWh) per year, with a maximum demand of about 300 kilowatts (kW). The facility's usage represents about 3% of total City electrical usage. At current rates and metering configuration, the annual electrical costs for the facility are about $122,000. About 60% of the charges are for energy used, and about 37% is for "demand" charges that are based on the maximum instantaneous use of electricity during the month. The remaining 3% is for monthly service charges. The facility houses primarily day-time operations, so the energy load is a good match for solar electric output.

Request For Proposals

In late 2006, staff applied for an SCE rebate to preserve access to the more favorable rebate of $2.50/watt of installed solar electric capacity, or up to $1 million, depending on project size. At that time, the League of California Cities had announced a program to assist cities with financing and installing third-party solar electric systems. Staff applied to the program, requested a proposal from the program's vendor, and began review of the proposal. Unfortunately, the program was cancelled and it was necessary to initiate a second process of soliciting proposals. In the initial step, we received Statements of Qualifications from 19 firms. From this group, eight were invited to submit proposals, due on August 27, 2007. Proposals from six teams were received, which have been under review by staff on the basis of the following criteria:

- Ability to successfully complete the project and qualify for the SCE rebate
- Experience with installation of large solar electric systems
- Experience with financing solar projects under a power purchase agreement
- Price for the solar electric energy produced by the system and sold to the City

Staff has identified the proposals submitted by E.I. Solutions and REC Solar as the two top candidates. As of this writing, negotiations were underway with the two teams to clarify and compare the proposals, so we are unable to publicize further details.

Economic Impacts

The cost aspects of the project have been analyzed consistent with proposed cost-benefit guidelines presented to the Finance Committee in June 2007. The guidelines recommend an assumed average annual inflation rate of 3%, with an additional 1% "real" price escalation for electric costs, resulting in average annual increases of 4% for electricity. Present value analysis is applied using a discount rate of 5% to adjust future costs to their equivalent present value. Using these assumptions and recent SCE billing rates for energy use and demand charges, we have compared anticipated solar costs to the cost of staying with grid power for all usage on site.

Based on the review of the proposals to date, we expect the solar option to be somewhat more expensive than the status quo. This is consistent with earlier projections and is due to the relatively low cost for the energy portion of the bill under current rates. When comparing the total facility electrical costs, we expect a premium of about 15% to 25% under the solar option, or about $18,000 to $30,000 per year, compared to the total current cost of about $122,000 per year. However, there are some important clarifications:

Renewable Energy Certificates (REC's): REC's represent the renewable nature of solar energy (separate from the energy itself). They can be bought and sold, with the most common current usage being a desire to voluntarily offset the use of non-renewable energy. This is not a well developed market, so the value is unclear, but future requirements to limit use of non-renewable energy may further develop an offset market similar to that used to promote air emission reductions. Staff has assumed that Council would prefer to retain REC's in order to be able to claim the project as a contribution toward the City's renewable energy portfolio. The cost numbers above assume the City would retain the REC's from the solar project.

Potential Extraordinary Electric Price Escalation: We believe that the assumptions used for inflation and electric price escalation are appropriate, but there could be extraordinary influences on energy prices in the coming years. Increasing difficulty in finding and producing oil and gas, political instability in oil rich areas, and the imposition of "carbon taxes" in response to concerns about climate change are potential forces that could act to further accelerate energy price increases. In contrast, the proposed solar prices would be defined at a fixed escalation rate for the 20-year term of the agreement.

Time of Use (TOU) Rates: There is movement by the Public Utilities Commission toward requiring TOU pricing, where energy used during weekday summer afternoons is considerably more expensive than mid-peak and off-peak rates, and considerably more expensive than the cost under the current SCE rate schedule. If TOU pricing becomes mandatory, the facility's high daytime usage would be more closely targeted with the higher prices. Our initial analysis of TOU pricing confirms that solar savings would increase in the event of a mandatory TOU rate schedule.

In general, the above points have the potential to mitigate the projected premium for using solar electric energy at the facility.

On September 11, 2007, the Finance Committee heard an update on the project and discussed issues related to estimated project cost and REC's. The Committee voted unanimously to recommend to Council that the project move forward based on an estimated solar cost increment of up to 25% compared to conventional grid power and that the City retain the REC's under the proposed agreement.

Next Steps

Given the very short timeline for submittal of signed agreements to SCE, staff has continued to negotiate with the two finalists in order to make a selection as soon as possible and allow time for preparation of necessary documents. We expect to be able to announce the preferred proposal at the September 18, 2007 Council meeting and would proceed to finalize the documents if an agreement can be reached. If not, we would negotiate with the second place proposer. The above recommendations will provide the authorization necessary to allow staff to finalize the agreements and submit for the SCE rebate. The proposed project has been developed with attention to the City's Solar Design Guidelines. The Environmental Analyst has determined that the project is exempt from further environmental review. If successful in completing agreements and applications, the project would be completed by approximately July 31, 2008.

SUSTAINABILITY IMPACT:

The project is directly related to the City's goal of promoting renewable energy use in City facilities. It would be one of the largest solar electric systems in the area and generate up to 600,000 kWh of renewable electricity per year.

BUDGET/FINANCIAL INFORMATION:

The budget impact would be the estimated increased power cost of up to about $30,000 per year. These costs would be apportioned among the programs that currently pay electrical costs at the facility, and adjustments would be made as needed in the Fiscal Year 2009 budget. We expect possible costs related to modifications to the City's electrical distribution system and emergency generation equipment in coordination with the project. We would return to Council for an appropriation, if necessary.

PREPARED BY: Bill Ferguson, Water Resources Supervisor/mh

SUBMITTED BY: Anthony J. Nisich, Public Works Director

APPROVED BY: City Administrator's Office